

From the year 2050; a glimpse of medical education in the future

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Abstract

This article is supposedly sent from the future; the year 2050. The author describes the evolution of medical education in 21st century and focuses on the challenges ahead of today. The long years of laborious medical education and complex irrelevant curriculum would instigate a loud debate to amend the current educational system. Gradually, the health system would plateau, as rapid turn out of voluminous new information would not be efficiently channelized to actual patient care. Patient dissatisfaction would increase and the clinician-researcher model of physician would be dubious. Consequently, substantial revisions would be inevitable. By year 2050, the author hypothesizes that the system of continuing medical education would be replaced by continuing professional development. The number of years to be a full certified specialist would be significantly shortened and clinicians would be trained to work in a highly specialized multidisciplinary framework. After a common core medical curriculum, health care professionals would adapt different tracks to be physicians, allied health workers and medical scientists. Programme designs would allow early hands on experience in a patient-specialist programme. The main outcomes of patient management would not be limited to diagnosis or treatment of ailment, and would fundamentally incorporate quality of life issues. An early commitment to medical specialty would enable clinicians to focus on their specialized domains, master their skills at the best learning age and retain their energies for tomorrow.

Keywords: Future, Year 2050, Medical education.

The era of realization (2000-2020)

The dynamic shift in system of continuing medical education for physicians started in the early 21st century when it was realized that medical education takes too long, it was costly, redundant, and also did not necessarily prepare people for practice in the 21st century. A few thought that it was unethical to waste the time of some of

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society's most highly educated and talented people. Certain aspects of medical education and training were considered a substantial waste. It used to take an average of 14 years of college, medical school, residency, and fellowship to train a subspecialty physician. Proposals were made to reduce average length of medical training by about 30% without compromising physician competence or quality of care.¹ University of Texas at Austin designed an educational model named TIME (transformation in medical education) for streamlining undergraduate medical studies.² The aim was to cut a year or two from the bachelor's degree and reduce the overall time to finish college. Twenty out of 135 accredited medical schools in the U.S offered some sort of shortcut to graduation.² University of Calgary and McMaster were among the first in North America to offer a 3 year medical curriculum.³ Similarly the medical school at Harvard University required students to complete only 15 months of clinical rotations in their new pathway M.D programme.¹

In the era of sub-specialties, "what every physician needs to know" should get considerably smaller, rather than larger.

"If someone's doing only hip replacements, is it necessary to train him to do abdominal surgery?" Such questions reflected the need for change. It was based on the fact that medical profession had already been divided into set of specialties. So it was realized that "What every physician needs to know" should get considerably smaller, rather than larger. This was logical but many perceived it as a threat to Flexner's advocacy.

Long lasting effects of Flexner's advocacy (1910-2000)

Abraham Flexner was a research scholar who did an assessment of medical education in North America in the early 20th century. His 1910 report helped change the face of American medical education for the next 100 years. Many aspects of American medical profession stem from the Flexner Report and its aftermath. His report called on American medical schools to enact higher admission and graduation standards, and to adhere strictly to the protocols of mainstream science in their teaching and research.⁴ As a consequence, many American medical schools fell short of the standard

advocated level in the report and had to be closed. Not only average physician quality improved significantly but also medicine became a highly paid and well-respected profession in North America. This was the first wave of change in the history of modern medical education. But later, there were new challenges. The predicament of 21st century was that many clinical teachers no longer exemplified Flexner's clinician-investigator model. It was soon realized that, though professionals in training were supposed to master both abundant theory and large bodies of knowledge but the final test of their efforts, however, was not what they know but what they do. So a drift in academic and clinical sector began to bring drastic changes in the curriculum and shorten the duration of medical education, but strong opposition rose to the movement. Many scholars, officials, researchers and physicians responded very strongly.

Trimming the number of years in medical education was considered a notion of 'turning out fully qualified doctors in a hurry'. Some argued that being a good doctor required solid grounding in a wide variety of fields of knowledge and considerable maturity of judgment, both of which would take a long time to develop.⁵ Others questioned that how would someone determine whether they are best suited to family practice, radiology or internal medicine? How would they determine whether their chosen specialty would provide the challenge and stimulation they need in the coming decades? Most would reach their decision gradually as they mature and develop an understanding of practice. It was feared that if medical education was shortened, student's ability to make appropriate career decisions would be affected and larger number of physicians would be dissatisfied. It would leave gaping holes in the physician's understanding of the human condition, and lack of knowledge would significantly affect patient management. Some alleged that there should be no shortcuts in medical education and it should remain difficult because job nature of physicians was a difficult one.

Some argued that shortening medical education would affect physicians' competency as it requires a certain period of time to establish solid grounding and maturity of judgment in the field of medicine.

Medical education as a competitive medical specialty

An unexpected consequence of the long standing dialogue was that medical education per say got much attention. A high number of under graduate and post graduate programmes were introduced. The departments of medical education developed into institutes. Today (in

2050), undoubtedly one of the most competitive and highly paid specialties of medicine is medical education. As the universities of medical education continue to supervise the affiliated clinical departments in all medical care facilities, the educationists are considered the leaders in health profession today. The quality of medical care has improved tremendously since the integration of specialty of medical education in the curriculum.

Evidence based medicine; the collateral damage

By the end of 20th century, professional standards and guidelines were well established for medical care and research, yet teaching methods and practices were most often guided by personal experience and opinion and rarely by the scholarly inquiry, evidence and professional standards. Later, evidence based medicine was touted as the best medical practice but had its own repercussions. Information technology has been one of the principal driving forces in continuing medical education with profound implications. Increasing research and huge influx of new information imposed a collateral threat to evidence based medicine. Even the most cutting edge medical specialists could not keep pace with the rapid growth of medical data base. Naturally, they were not aware of all of the research that was going on in their respective fields. By 2030, the noble profession was widely affected by law suits and legal restraints cloaked by 'patient rights'. Efficiency of patient care and physician-patient satisfaction suffered tremendously when internet-acquired information by patients started to influence their choice of treatment. This somehow led to a productive outcome. Medical education was incorporated with patient-specialization. A term of 'patient-specialist' was introduced in a new manner. Willing patients were offered a proactive role by hiring them as medical teachers. It was a three-base hit. As we see today (in 2050), the patient-specialists keep an update of the latest research and treatment pertaining to their disease. They share this information with medical students, support groups and professionals. It also serves as an excellent platform for health education, client satisfaction and vocational support. Furthermore, to quantify reliable resources and ensure quality information, health websites not approved by medical authorities are blocked by using the software 'Nucleus'. This is the greatest bio-medical weapon ever which also toppled the business-malpractice in medicine.

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◆ ***Internet acquired information by patients would***

influence their choice of treatment.

The era of health system plateau (2020-2030)

For years medical education had been subjected to double standards. Some physicians were trained at institutes where patient care and research were held to a more rigorous level than education. Most of them, however, chose to be practicing physicians and few opted for academic career. While, in majority of medical schools, less attention was given to critical thinking. Consequently, the destined researchers of future ended up in being practicing physicians, while physicians with no research background wanted to explore research sciences to keep up with the professional demands. Such a mix of physicians were produced for decades till the time it was

realized that in spite of massive turn out of evidence based guidelines, there was no system to efficiently channelize/direct or translate this volume of information to actual patient care. Researchers proved that the rapid turn out of this valuable information was no more useful as there was no actual improvement in quality of life and public health. The outcomes were poor; the system had reached a plateau.

The health systems would choke as it would be difficult to efficiently channelize the rapid turn out/production of voluminous new information to actual patient care.

The era of revolution (2030-2050)

Eventually, continuing medical education (CME) was

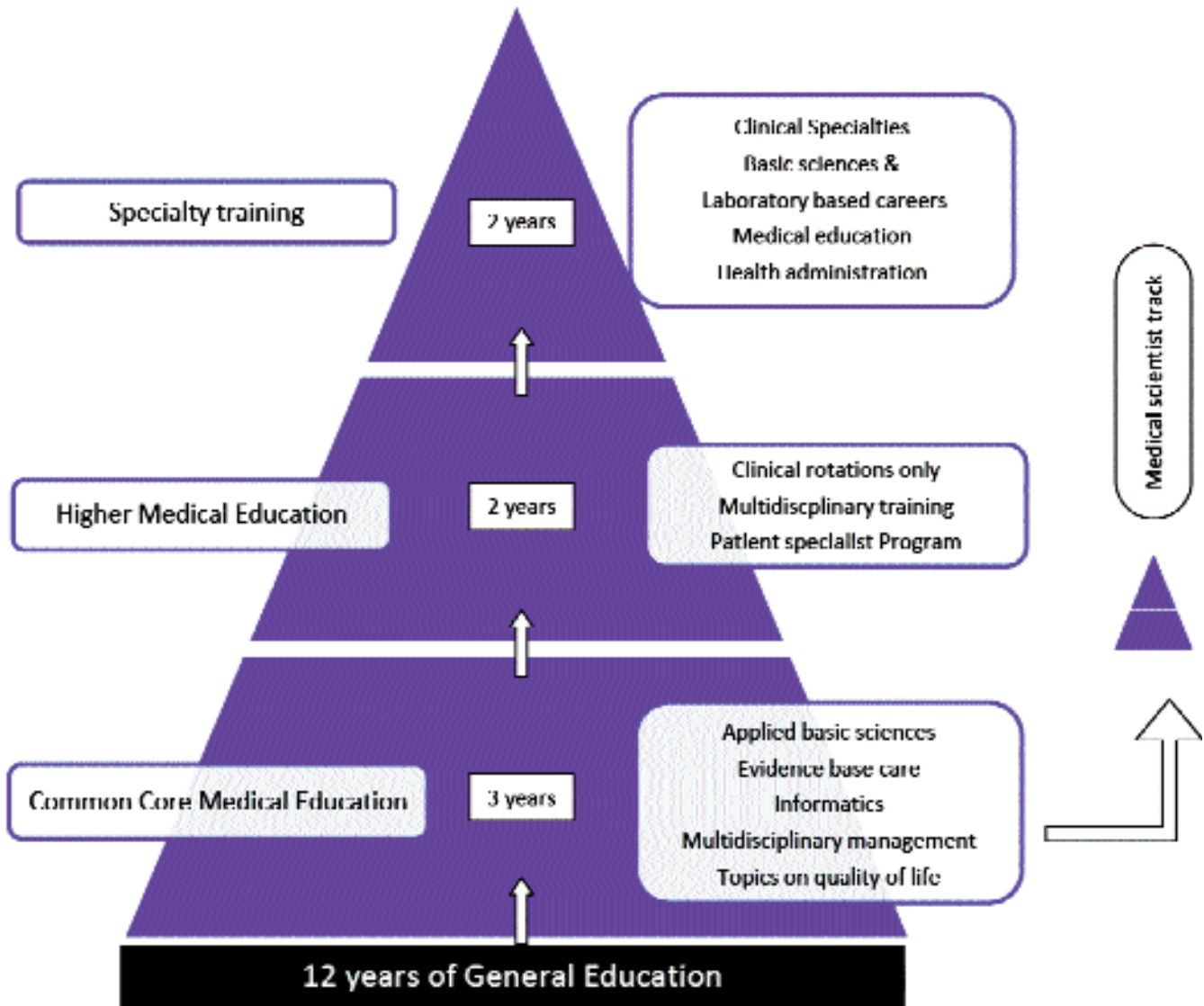


Figure: Conceptual Model of Medical Education in 2050 - The Physician Track.

replaced by the current system of continuing professional development (CPD). It not only focuses on clinical update but also imparts managerial, social, and personal skills. One of the milestones of modern medical curriculum is that it has redefined the outcomes of patient care. These outcomes are not limited to medical care, diagnosis or treatment of ailment. Quality of life issues and the successful reintegration of patients back in the society are considered most important. Today, hospitals can lose their accreditations if their vocational and rehabilitation facilities do not meet standard requirements. The holistic approach towards patient care has totally changed the health system. Every patient is obliged to receive multidisciplinary care. The contribution of allied health care worker is now considered at par with the physicians in patient management. Though physicians remain team leaders in most settings, their professional roles have changed over the last few years. Hence they are educated differently as well.

Modern day medical education; the year 2050

After completing general education for 12 years, students who intend to be health care professionals gain entry in a 3 year core medical curriculum (Figure). This curriculum includes applied basic sciences, evidence base care, informatics, multidisciplinary management and topics on quality of life. They are given opportunity to gain hands-on experience at an early stage e.g. The classical anatomy dissection is enhanced using 3D imaging modalities and is carried out using classic surgical tools of operative surgery. After going through a rigorous evaluation in these core-competencies, they can choose or compete for higher medical education which has 3 tracks. Physician track, allied health care track and a medical scientist track. Each track is of 2 years. In a physician track, students are enrolled in clinical rotations only. They can choose or opt out few clinical rotations based upon their aptitude or exposure during core curriculum. They are trained in patient care from day 1 with case-to-case learning in patient-specialist programme. The system based approach has been largely replaced by holistic approach.

Prospective doctors are trained in a multidisciplinary setting where students from other tracks also join them under the same roof. After 2 years of higher medical education, physicians can now enter a specialty training directly, based upon their interest or competencies. Two years of specialty training is offered in the following pathways: basic sciences, laboratory based careers, clinical training pathways, medical education and health administration. Medical education, preventive medicine and integrative medicine are the top three specialties today. The term subspecialty is considered obsolete now. A general orthopaedic surgeon enters a different training programme than ankle and foot surgeon. Each programme retains their own curriculum and structure to ensure safe practice and inculcate relevant skills in their trainees. This applies to all specialties involving intervention.

Today, it takes 7 years to be a medical specialist after high school. An early commitment to a medical specialty and uniformity in educational system has enabled us to focus on relevant learning outcomes. No gift could be more precious than what medical ancestors have given to their descendants. They enabled today's doctors to achieve those things in the beginning of their career which they accomplished very late in their own lives.

Yes, there is a short cut in medicine: 'skill in time saves nine'.

References

1. Emanuel EJ, Fuchs VR. Viewpoint: Shortening medical training by 30%. *JAMA* 2012; 307: 1143-4.
2. Roser MA. UT System plans a fast track through medical school. *The American-Statesman*. June 21, 2011. (Online) (Cited 2012 January 13). Available from URL: <http://www.statesman.com/news/local/ut-system-plans-a-fast-track-through-medical-1553857.html>.
3. Flegel KM, Hébert PC, MacDonald N. Editorial: Is it time for another medical curriculum revolution? *CMAJ* 2008; 178: 11-13.
4. Cooke M, Irby DM, Sullivan W, Ludmerer KM. American medical education 100 years after the Flexner report. *N Engl J Med* 2006; 355: 1339-44.
5. Angell M. Perspectives: a medical editor. *Health Aff (Millwood)* 1988; 7 (2 Suppl): 58-62.